

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

Have later editions

U. S. DEPARTMENT OF AGRICULTURE

FARMERS' BULLETIN No. 1721

DETERMINING THE AGE OF FARM ANIMALS BY THEIR TEETH



LIVESTOCK owners and buyers of market animals often find it desirable to determine the approximate age of the animals. This can be accomplished in most instances by a careful examination of the teeth.

This publication shows how to determine, by the size and condition of the teeth, the approximate age of farm animals from early life to maturity and, in many cases, even in old age.

This bulletin is a revision of and supersedes Farmers' Bulletin 1066, Determining the Age of Cattle by the Teeth.

Washington, D.C.

March 1934

DETERMINING THE AGE OF FARM ANIMALS BY THEIR TEETH

By GEORGE W. POPE, chief, *Field Inspection Division, Bureau of Animal Industry*

CONTENTS

	Page
Importance of determining the age of farm animals.....	1
Horses and mules.....	1
Cattle.....	7
Sheep and goats.....	10
Swine.....	11

IMPORTANCE OF DETERMINING THE AGE OF FARM ANIMALS

THE PRODUCTIVE LIFE of farm animals is comparatively brief, the height of their usefulness being limited to a few years. For this reason the returns from livestock tend to decrease with advanced years. The age of animals, therefore, is a matter of utmost importance to the breeder, the seller, and the buyer.

Physical changes within the body are constant. They affect the general outward appearance and disposition and, within certain limitations, it is not difficult by mere general appearance to distinguish the young animal from one that has reached maturity, or even to determine the approximate age of an old animal. Changes which take place in the teeth, however, afford the best opportunity of determining the age.

Establishing the age of farm animals through the appearance of the teeth is no new thing. The possibility of judging in this manner apparently was well known in ancient days. The old saying, "Do not look a gift horse in the mouth", is attributed to Saint Jerome, of the fifth century, who used this expression in one of his commentaries. Certainly for generations the appearance, development, and subsequent wear of the teeth has been recognized as a dependable means of judging approximately the age of animals.

With a knowledge of the age at which the teeth appear, the time for shedding temporary or milk teeth and their replacement with permanent teeth, and the changes in form which result from natural wear, the approximate age of farm animals can be determined. Theoretical knowledge, however, is not sufficient, and any one who would become proficient must also have practical experience. This bulletin describes briefly the normal processes of dentition and the changes which time brings about, and explains how to determine the ages of animals by examining their mouths.

HORSES AND MULES

The ordinary observer can readily learn to tell the age of horses or mules with considerable accuracy until the animals have passed their eighth year. Beyond this time even those who are experienced may find it difficult to determine the exact age.

The mature male horse has 40 teeth (fig. 1). Twenty-four of these are molars or grinders, 12 are incisors or front teeth, and 4 are tushes or pointed teeth. The 2 central incisors are known as centrals or nippers; the next 2, 1 on each side of the nippers, are called intermediates or middles, and the last, or outer pair, the corners. The tushes are located between the incisors and the molars. They are not usually present in the mare, and accordingly she may be considered to have a total of 36 teeth rather than 40, as in the male.

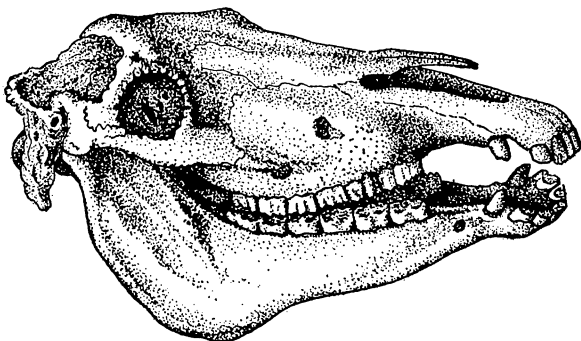


FIGURE 1.—Skull of the horse (from Frateur).

The young animal, whether male or female, has 24 temporary teeth, commonly called milk teeth, as they are much whiter than the permanent teeth. These milk teeth consist of 12 incisors and 12 molars. The latter are the 3 back teeth on each side of both the upper and the lower jaw. The milk teeth are shed and replaced by permanent teeth at fairly definite periods, which serve as an index in determining the age of young colts.

The temporary central incisors or nippers may be present at birth (fig. 2, *A*); otherwise they appear before the colt is 10 days old. There are two in each jaw.

At the age of from 4 to 6 weeks the two temporary intermediates, upper and lower, appear (fig. 2, *B*). These teeth immediately adjoin the nippers.

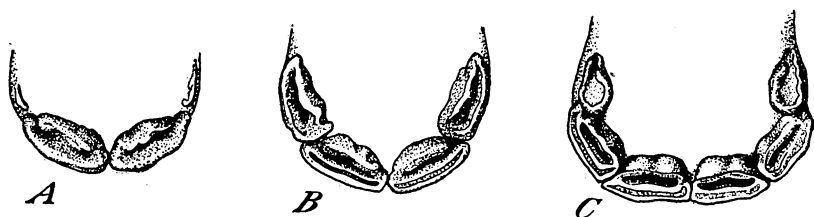


FIGURE 2.—Temporary incisor teeth of a young colt: *A*, Immediately after birth; *B*, at 6 weeks; *C*, from 6 to 10 months after birth.

When the colt is from 6 to 10 months old the corner or outer incisors, two above and two below, are cut (fig. 2, *C*). This gives the young animal a full set of temporary front teeth.

By the time the colt has reached the age of 1 year the crowns of the central incisors show wear (fig. 3, *A*). In another 6 months the intermediates or middles become worn (fig. 3, *B*), and at 2 years all the teeth are worn (fig. 3, *C*). During the following 6 months there are no

changes which will distinguish the exact age. At about $2\frac{1}{2}$ years, however, the shedding of the milk teeth begins and at 3 years the tem-

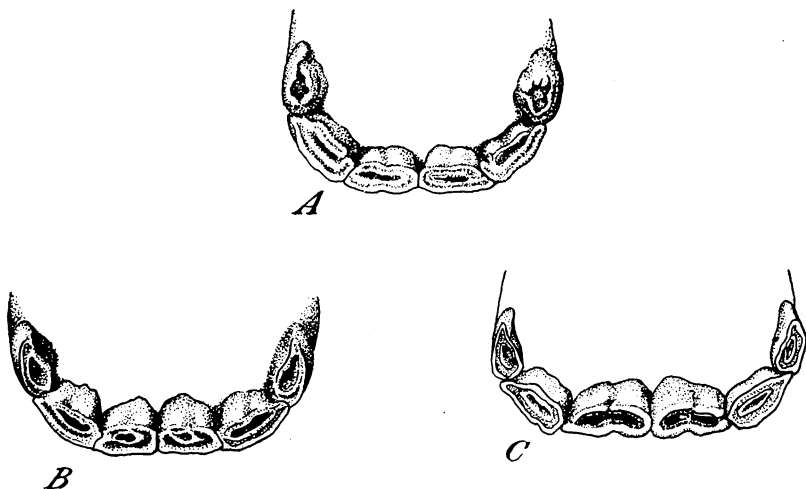


FIGURE 3.—Appearance of the incisor teeth of a colt: *A*, At 1 year; *B*, at 18 months; and *C*, at 2 years.

porary central nippers, two above and two below, are replaced by the permanent central incisors.

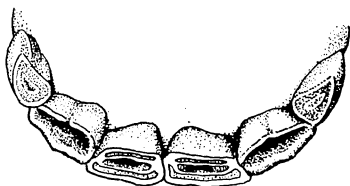


FIGURE 4.—Incisors of a horse at 4 years. The permanent incisors are the four in the center, and the temporary ones are at the corners.

At 4 years the four permanent intermediates have taken the place of the four temporary middles (fig. 4).

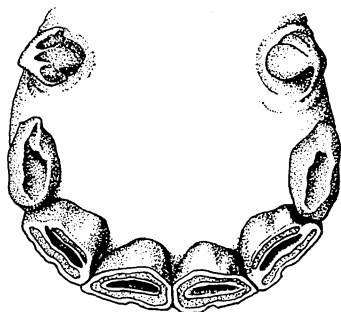


FIGURE 5.—Permanent incisors of a horse at 5 years. The tushes also shown here indicate that the animal is a male.

When the animal is about $4\frac{1}{2}$ years old the shedding of the four corners begins, and at 5 years the permanent teeth which replace them are well up but not in contact (fig. 5).

In a 6-year-old horse the corner incisors are on a level with the adjoining teeth, with a well-marked dental cavity or "cup" showing practically no wear (fig. 6). The nippers show wear over the entire

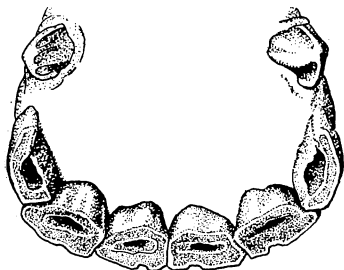


FIGURE 6.—Incisors of a horse at 6 years.

surface; the "cup" though visible shows indications of gradual disappearance and at this stage is without a hollow.

When the animal is 7 years old, not only the nippers but also the middles show wear (fig. 7). Each upper corner tooth has an indenta-

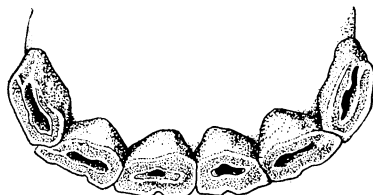


FIGURE 7.—Incisors of a 7-year-old horse.

tion caused by wear from the corresponding lower tooth, resulting in a downward triangular projection of the posterior edge. This projection is commonly termed "dovetail" (fig. 8).



FIGURE 8.—Side view of incisors of a 7-year-old horse. Note, in upper corner incisors, the notch which appears at this age.

In the 8-year-old horse all the incisors are worn, the cup has entirely disappeared from the nippers, but shows to a slight extent in the middles, and is still well marked in the corners. At this stage what is termed the "dental star" makes its appearance as a yellow transverse line just back of the front edge of the table, or flat surface, of the nippers and middles (fig. 9).

Between the ages of 9 and 13 years there is a gradual change in the contour of the tables of the incisors. In a 9-year-old animal the

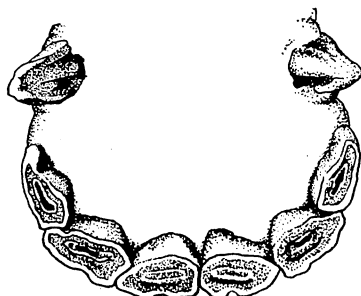


FIGURE 9.—Incisors of 8-year-old horse. Dark line in front of cup is the dental star.

nippers take on a more or less rounded contour; the dental cavity or cup has disappeared from all but the corners; the dental star is found

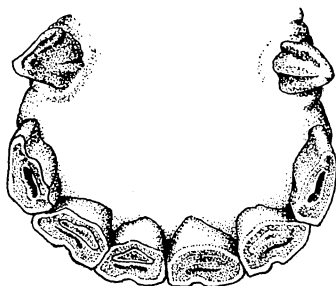


FIGURE 10.—Incisors of a male horse 9 years old.

in both the nippers and middles and in the former is near the center of the table (fig. 10). At 10 years the middles become rounded, and

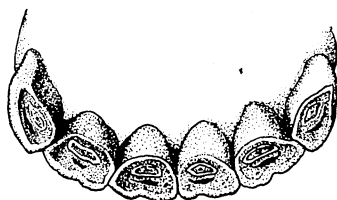


FIGURE 11.—Incisors of a horse at 10 years.

the dental star, now seen on all the incisors, is near the center of both the nippers and middles (fig. 11). At 11 or 12 years the corners have

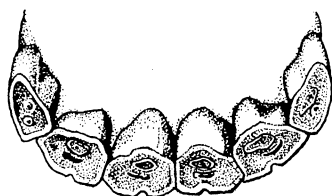


FIGURE 12.—Incisors of a horse at 11 or 12 years.

a somewhat rounded form, and the dental star approaches the center of the table (fig. 12). As the horse reaches 13 years of age all the

lower incisors are unmistakably rounded, the dental star is found in the center of all the tables, and the enamel rings which formerly surrounded the cups have entirely disappeared (fig. 13).

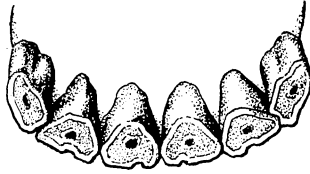


FIGURE 13.—Incisors of a horse at 13 years.

In a horse about 14 years of age the tables of the incisors begin to change from a rounded to a triangular contour. This change occurs



FIGURE 14.—Incisors of a 14-year-old horse.

in the nippers at 14 years (fig. 14), in the middles at 15 years, and in the corners at 16 or 17 years (fig. 15).

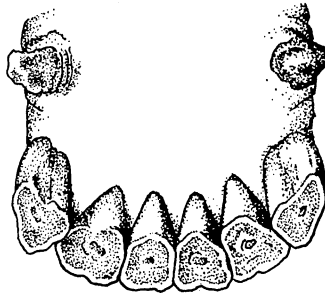


FIGURE 15.—Incisors and tushes of a male horse at 17 years. The mouth of a female has the same appearance except for the absence of tushes.

During the following 4 years after the appearance of the triangle, there is a gradual approach of the tables to the form of a rectangle, as shown in figure 16. The teeth during this period are usually

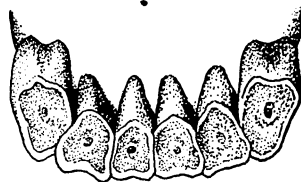


FIGURE 16.—Characteristic shape of an old horse's lower incisors at 18 years.

elongated and directed obliquely. The dental arch also becomes contracted and pointed and the under edges of the lower jaw are thin and sharp as compared with their appearance in a young horse (fig. 17).

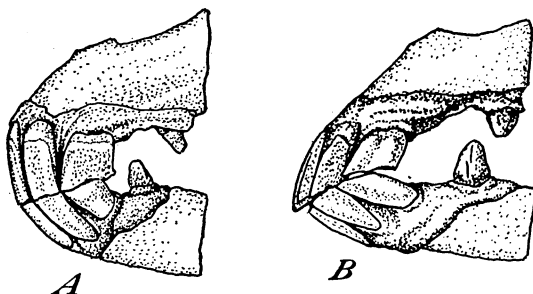


FIGURE 17.—Comparison of incisors and tusks of horses at different ages: *A*, At 6 years, and *B*, at 20 years.

Should the animal live more than 20 years, these conditions become more marked and are accompanied by excessive wear and loosening or loss of molars.

CATTLE

Cattle at maturity have 32 teeth, of which 8 are incisors. All incisors are in the lower jaw (fig. 18). The two central incisors are

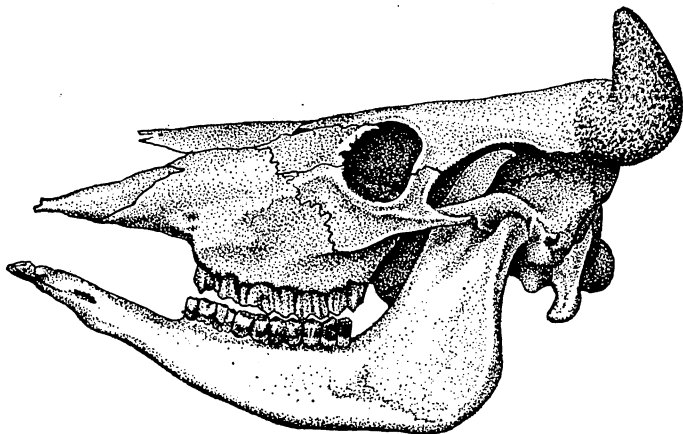


FIGURE 18.—Skull of an ox (from Sisson).

called pinchers; the next two, first intermediates; the third pair, second intermediates or laterals; and the outer pair is known as the corners. In place of the upper incisor teeth there is a thick layer of the hard palate called the dental pad (fig. 19).

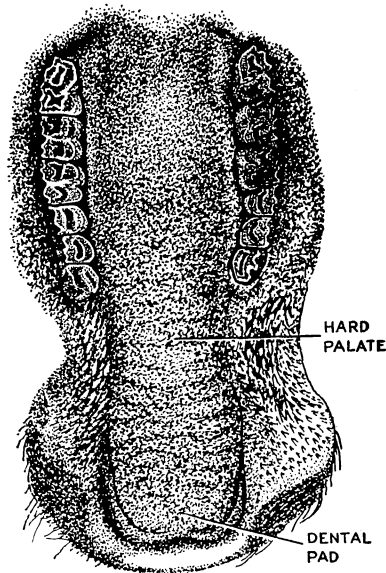


FIGURE 19.—Hard palate of an ox showing dental pad (from Sisson).

In the calf at birth two or more of the temporary or first set of incisor teeth are present. Within the first month the entire eight incisors have appeared (fig. 20).

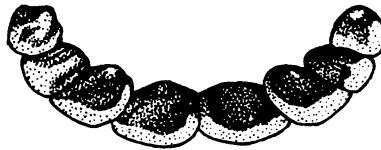


FIGURE 20.—Internal face of incisors of the calf at 1 month.

As the animal approaches 2 years of age the central pair of temporary incisor teeth or pinchers is replaced by the permanent pinchers. At 2 years these teeth attain full development (fig. 21).



FIGURE 21.—Internal face of incisors at 2 years.

At about $2\frac{1}{2}$ years the permanent first intermediates, one on each side of the pinchers, are cut and are usually fully developed at 3 years (fig. 22).

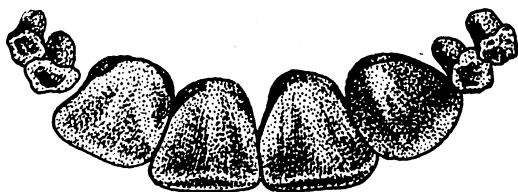


FIGURE 22.—Internal face of incisors at 3 years.

At $3\frac{1}{2}$ years the second intermediates or laterals are cut. They are on a level with the first intermediates and begin to wear at 4 years (fig. 23).

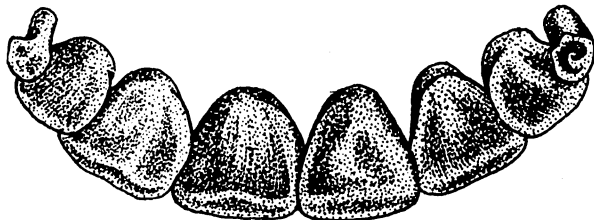


FIGURE 23.—Internal face of incisors at 4 years.

At about $4\frac{1}{2}$ years the corner teeth are replaced. At 5 years the animal usually has the full complement of incisors with the corners fully developed (fig. 24).



FIGURE 24.—Internal face of incisors at 5 years.

At 5 or 6 years there is a leveling of the permanent pinchers, the pinchers usually being leveled at 6 years and both pairs of intermediates partially leveled and the corner incisors showing wear.

At 7 or 8 years there is a noticeable wearing of the pinchers; at 8 or 9 years, of the middle pairs; and at 10 years, of the corner teeth.



FIGURE 25.—Internal face of incisors at 12 years.

After the animal has passed its sixth year, the arch gradually loses its rounded contour and becomes nearly straight by the twelfth year (fig. 25). In the meantime the teeth have gradually become triangular in shape, distinctly separated, and show progressive wearing to stubs. This condition becomes more marked with increasing age.

SHEEP AND GOATS

Mature sheep and goats have 32 teeth, of which 24 are molars and 8 are incisors (fig. 26). There are no tusks and, like those of cattle, all the incisors are in the lower jaw. As in the case of cattle, also, the two central incisor teeth are called pinchers; the adjoining ones, first intermediates; the third pair, second intermediates; and the outer ones, corners. The temporary incisors are readily distinguished from the permanent ones by their smaller size and milky whiteness.

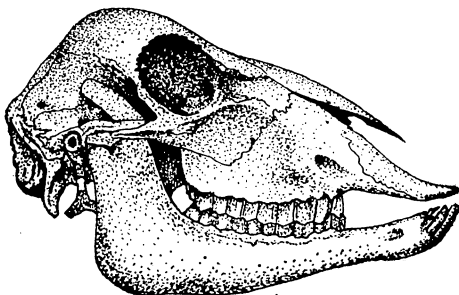


FIGURE 26.—Skull of a sheep (from Sisson).

In the new-born animal none of the teeth may have made their appearance though sometimes the two pinchers and also the two first intermediates are pressing through the gums or even have cut through. In a few days these teeth and the second intermediate incisors will appear, followed somewhat later by the corners, thus giving the animal, by the time it is 3 months old, a full set of completely developed temporary incisor teeth, as shown in figure 27, *A*.

When the animal is between 12 and 15 months of age the temporary pinchers are replaced by the two permanent ones (fig. 27, *B*).

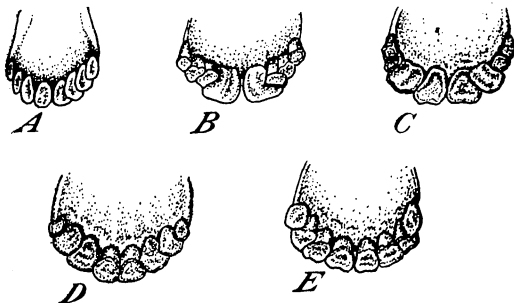


FIGURE 27.—Incisors of sheep at different ages: *A*, At 3 months; *B*, at 12 to 15 months; *C*, at nearly 2 years; *D*, at 3 years; and *E*, at 4 years.

The shedding of the first temporary intermediates and their replacement by permanent teeth indicate that the animal is approaching its second year (fig. 27, *C*).

The replacement of the second temporary intermediates by the permanent ones takes place when the animal is about 3 years old (fig. 27, *D*).

The two temporary corner incisors are replaced by permanent teeth as the sheep reaches the age of 4 years. All the permanent teeth are then present, and the animal has what is termed a "full mouth" (fig. 27, *E*).

After this time there is a distinct and progressive increase in size of the spaces between the teeth, which gradually become worn to stubs and frequently attain an unnatural and uneven length. In old sheep some teeth may be broken or loose; in such cases the animal is said to have a broken mouth.

SWINE

A mature hog has 44 teeth (fig. 28). Of these, 12 are front teeth or incisors, and 6 are in the upper and 6 in the lower jaw. Four others lie in the open spaces back of the incisors and are known as tusks, or tushes. They are usually more prominent in the male than in the female. Back of each tush is a tooth commonly called the premolar, and immediately back of this on each side of the upper and lower jaws there are 6 molars, the first 3 in each row sometimes being termed premolars. As in the horse, the incisors are grouped in three pairs in each jaw and are termed centrals, intermediates, and corners in accordance with their relative positions.

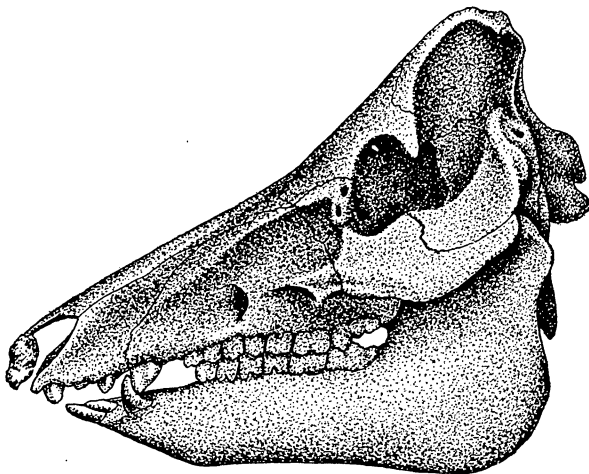


FIGURE 28.—Skull of a hog (from Sisson).

The young pig at birth usually has 8 teeth. These consist of the 2 tusks and 2 corner incisors on each jaw. They are all sharply pointed and are sometimes known as needle teeth (fig. 29, *A*). It is a common practice to cut them off, about halfway between the gum and point of the tooth, in the new-born pig, in order to avoid discomfort and injury to the nursing sow.

When the pig reaches the age of 4 or 5 weeks the central temporary incisors appear, two in the upper and two in the lower jaw (fig. 29, *B*).

As the animal approaches the age of 6 to 8 weeks the two intermediate incisors will have cut through the gums of the lower jaw between the corners and the centrals and will be fully grown at 3 months (fig. 29, *C*).

As the pig passes 6 months of age the temporary corner incisors are shed, and the permanent corners appear. Shortly after 9 months the permanent tusks take the place of the temporary tusks. At approximately 12 months the central permanent incisors replace the temporary centrals, and the lower teeth appear as shown in figure 29, *D*.

During the next 3 months the first 3 temporary molars, on each side of upper and lower jaw, will be shed. These are immediately back of the premolars, which in turn are back of the tusks. When

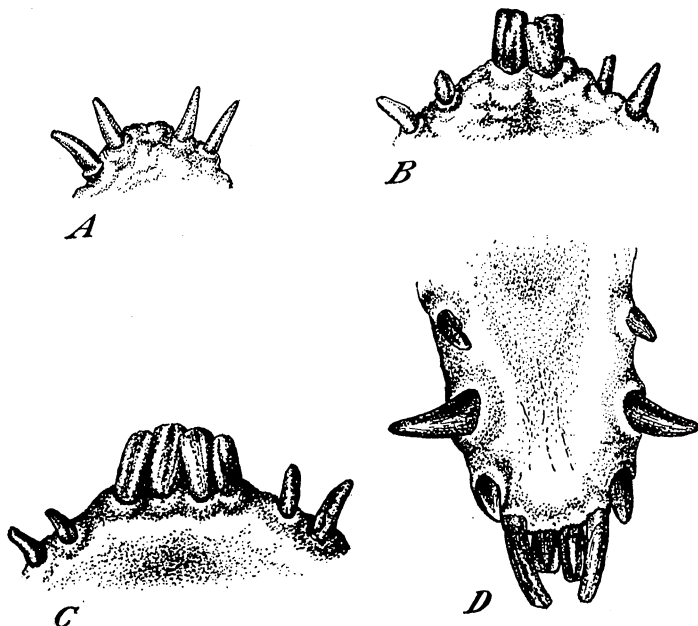


FIGURE 29.—Teeth in the lower jaw of the hog: *A*, At birth; *B*, at about 5 weeks; *C*, at 3 months; and *D*, at 12 months.

these temporary molars, 12 in all, have been replaced by permanent molars, the pig has attained the age of at least 15 months.

As a rule the shedding of the temporary intermediate incisors and the appearance in their places of the permanent ones are indications

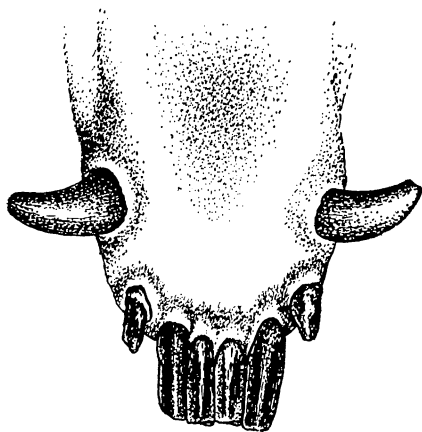


FIGURE 30.—Lower front teeth of a hog approximately 20 months old. The prominent tusks indicate that the animal is a boar.

that the hog is approximately 18 months of age. By the time the animal has reached the age of 20 months these intermediate incisors will be in line with the centrals (fig. 30).

As there is no further shedding or eruption of teeth, the age of hogs beyond 20 months of age cannot be so easily estimated. At 2 years, however, the incisors, including the intermediates, will show wear, and the sixth or last molars (one upper and one lower on each side) will be fully up and about to come in contact.

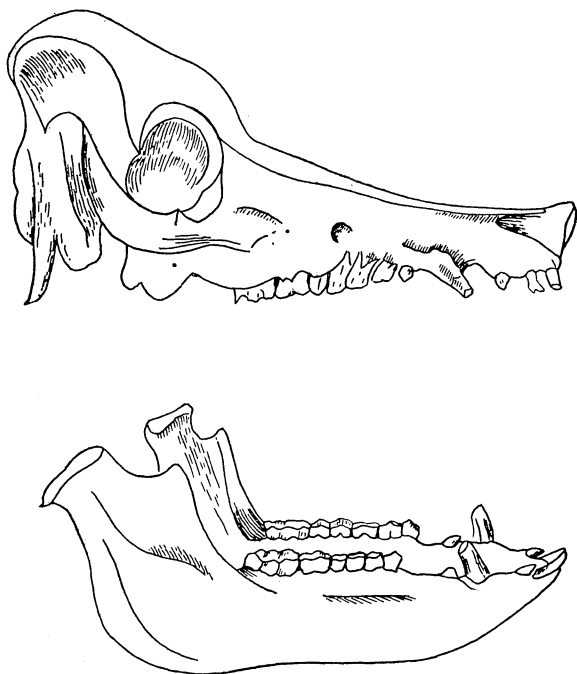


FIGURE 31.—Typical appearance of teeth of an 8-year-old sow

After 2 years it is difficult to judge the age of swine by the teeth. However, except in the case of breeding and exhibition animals, it is not often important to know the exact age of mature hogs. It is possible, however, to associate progressive wear of the teeth with the advance in age. Aged swine show considerable wear of the teeth, especially of the molars (fig. 31).

ORGANIZATION OF THE UNITED STATES DEPARTMENT OF AGRICULTURE WHEN THIS PUBLICATION WAS LAST PRINTED

<i>Secretary of Agriculture</i>	HENRY A. WALLACE.
<i>Assistant Secretary</i>	REXFORD G. TUGWELL.
<i>Director of Scientific Work</i>	A. F. WOODS.
<i>Director of Extension Work</i>	C. W. WARBURTON.
<i>Director of Personnel and Business Administration.</i>	W. W. STOCKBERGER.
<i>Director of Information</i>	M. S. EISENHOWER.
<i>Solicitor</i>	SETH THOMAS.
<i>Agricultural Adjustment Administration</i>	CHESTER C. DAVIS, <i>Administrator.</i>
<i>Bureau of Agricultural Economics</i>	NILS A. OLSEN, <i>Chief.</i>
<i>Bureau of Agricultural Engineering</i>	S. H. MCCRORY, <i>Chief.</i>
<i>Bureau of Animal Industry</i>	JOHN R. MOHLER, <i>Chief.</i>
<i>Bureau of Biological Survey</i>	PAUL G. REDINGTON, <i>Chief.</i>
<i>Bureau of Chemistry and Soils</i>	H. G. KNIGHT, <i>Chief.</i>
<i>Office of Cooperative Extension Work</i>	C. B. SMITH, <i>Chief.</i>
<i>Bureau of Dairy Industry</i>	O. E. REED, <i>Chief.</i>
<i>Bureau of Entomology</i>	LEE A. STRONG, <i>Chief.</i>
<i>Office of Experiment Stations</i>	JAMES T. JARDINE, <i>Chief.</i>
<i>Food and Drug Administration</i>	WALTER G. CAMPBELL, <i>Chief.</i>
<i>Forest Service</i>	FERDINAND A. SILCOX, <i>Chief.</i>
<i>Grain Futures Administration</i>	J. W. T. DUVEL, <i>Chief.</i>
<i>Bureau of Home Economics</i>	LOUISE STANLEY, <i>Chief.</i>
<i>Library</i>	CLARIBEL R. BARNETT, <i>Librarian.</i>
<i>Bureau of Plant Industry</i>	KNOWLES A. RYERSON, <i>Chief.</i>
<i>Bureau of Plant Quarantine</i>	A. S. HOYT, <i>Acting Chief.</i>
<i>Bureau of Public Roads</i>	THOMAS H. McDONALD, <i>Chief.</i>
<i>Weather Bureau</i>	WILLIS R. GREGG, <i>Chief.</i>